California Energy Commission

STAFF REPORT

LOCALIZED HEALTH IMPACTS REPORT

For Selected Projects Awarded Funding Through the Alternative and Renewable Fuel and Vehicle Technology Program Under Solicitation GFO-15-606 – Community-Scale and Commercial-Scale Advanced Biofuels Production Facilities

California Energy Commission

Edmund G. Brown Jr., Governor

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ABSTRACT

Assembly Bill 118 (Núñez, Chapter 750, Statutes of 2007) created the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). This statute, amended by Assembly Bill 109 (Núñez, Chapter 313, Statutes of 2008), authorizes the California Energy Commission to "develop and deploy innovative technologies that transform California's fuel and vehicle types to help attain the state's climate change policies." Assembly Bill 8 (Perea, Chapter 401, Statutes of 2013) reauthorizes the ARFVTP through January 1, 2024.

AB 118 also directs the California Air Resources Board (CARB) to develop guidelines to ensure air quality improvements. The CARB Air Quality Improvement Program (AQIP) Guidelines, approved in 2008, are published in the *California Code of Regulations, Title 13, Motor Vehicles, Chapter 8.1, AB 118 Air Quality Guidelines for the Alternative and Renewable Fuel and Vehicle Technology Program and the AQIP*. The *AQIP Guidelines* require the Energy Commission, as the funding agency, to analyze the localized health impacts of ARFVTP-funded projects that require a permit (13 CCR § 2343). As provided by 13 CCR § 2343, this Localized Health Impacts Report is required to be available for public comment for 30 days prior to the approval of projects.

This Localized Health Impacts Report analyzes the combined impacts in the communities, including exposure to air contaminants or localized air contaminants, or both. These impacts include, but are not limited to, communities of minority populations or low-income populations, as declared by the community-scale and commercial-scale advanced biofuels production facilities proposers or as determined by Energy Commission staff. Appendix A, Localized Health Impact Report Assessment Method, describes the analysis used for this Localized Health Impacts Report.

Keywords: Air pollution**,** air quality, Air Quality Improvement Program (AQIP), California Air Resources Board (CARB), Assembly Bill (AB) 118, California Environmental Quality Act (CEQA), criteria emissions, demographics, environmental justice (EJ) indicators, Environmental Justice Screening Method (EJSM), localized health impact (LHI)

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EXECUTIVE SUMMARY

Under the *California Code of Regulations Title 13, (CCR § 2343),* this Localized Health Impacts Report describes the alternative fuel demonstration projects proposed for Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP) funding that may or may not require a conditional or discretionary permit or environmental review, such as conditional use permits, air quality permits, wastewater permits, hazardous waste disposal permits, and other land-use entitlements. This report does not include projects that require only residential building permits, mechanical/electrical permits, or fire/workplace safety permits, as these are determined to have no likely impact on the environment.

The California Energy Commission is required to assess the localized health impacts of the projects proposed for ARFVTP funding. This Localized Health Impacts Report focuses on the potential impacts projects may or may not have on a particular community, particularly those communities that are considered especially vulnerable to emissions increases. For high-risk communities, this report assesses the impacts from criteria emissions/air toxics and the air quality attainment status.

Environmental justice communities, low-income communities, and minority communities are considered to be the most impacted by any project that could result in increased criteria and toxic air pollutants within an area because these communities typically have the most significant exposure to the emissions. Assessing projects and the communities surrounding them is important because of the health risks associated with these pollutants. Preventing health issues from air pollution in any community is important, but it is especially important to minimize any negative impacts in communities that are already considered to be at risk due to their continued exposure to these contaminants.

The projects in this Localized Health Impacts Report are assessed for potential health impacts for the communities in which they will be located. Based on this analysis, it is not anticipated that implementing these projects will have negative impacts because there will not be a net increase in criteria and toxic emissions, specifically in those communities that are considered most vulnerable. Potentially, the projects stand to provide improved quality of life through cleaner air.

CHAPTER 1:
Projects Proposed for Funding

On July 15, 2016, the California Energy Commission released a competitive grant funding opportunity titled "Community-Scale and Commercial-Scale Advanced Biofuels Production Facilities" (GFO-15-606) under the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). This grant opportunity was an offer to fund low-carbon biofuel production projects at new and existing biofuel production facilities.

On February 17, 2017, the Energy Commission posted the notice of proposed awards (NOPA) for GFO-15-606, resulting in five community-scale and six commercial-scale advanced biofuels production facilities proposed for funding. This Localized Health Impacts Report assesses and reports on the potential localized health impacts of the proposed projects with public review and comment for a 30-day period.

This chapter summarizes the projects proposed for Energy Commission funding. Table 1 provides the applicant, project name, project address, and environmental justice (EJ) indicators. (See Appendix A.)

Table 1: Proposed Projects for Community-Scale and Commercial-Scale Advanced Biofuels Production Facilities With Environmental Justice Indicators

Community-Scale Advanced Biofuels Production Facilities			
Applicant	**Project Name**	**Project Address**	**EJ Indicator(s)**
CR&R Incorporated	CR&R Perris Biomethane Facility Expansion – Phase 3	1706 Goetz Road Perris, CA 92570	Poverty, Unemployment, Minority, and Age
California Bioenergy LLC	Kern Diary Biogas RNG Project	12841 Bear Mountain Boulevard Bakersfield, CA 93311	Poverty, Unemployment, Minority, and Age
Anaheim Energy LLC	Centralized MSW Organic Waste to Biomethane Facility at the Rialto Bioenergy Facility	503 E Santa Ana Avenue Bloomington, CA 92376	Poverty, Unemployment, Minority, and Age
County Sanitation Districts of Los Angeles County	Biogas Conditioning System for Production of Renewable Natural Gas Vehicle Fuel Derived From Anaerobic Digestion of Recycled Food Waste at a Wastewater Treatment Plant	24501 S. Figueroa Street Carson, CA 90745	Unemployment, Minority, and Age
City of Manteca	City of Manteca Waste to Fuels Program	2450 W. Yosemite Avenue Manteca, CA 95337	Unemployment and Minority

Commercial-Scale Advanced Biofuels Production Facilities			
Applicant	**Project Name**	**Project Address**	**EJ Indicator(s)**
SJV Biodiesel, LLC	SJV Flex Feed Biodiesel	11704 Road 120 Pixley, CA 93256	Poverty, Unemployment, Minority, and Age
New Leaf Biofuel, LLC	The New Leaf Biofuel Upgrade and Production Expansion Project	2285 Newton Avenue San Diego, CA 92113	None
Wonderful Renewable Energy, LLC	Wonderful Renewable Ag Products	15853 Brown Material Road Lost Hills, CA 93249	Poverty, Unemployment, Minority, and Age
Tracy Renewable Energy	Tracy Integrated Campus: Renewable Ethanol from Sugar Beets	20500 Holly Drive Tracy, CA 95301	Unemployment and Minority
Crimson Renewable Energy, LP	The 3rd Generation Bakersfield Biodiesel Production Facility	17731 Millux Road Bakersfield, CA 93311	Poverty, Unemployment, Minority, and Age
Wonderful Renewable Energy, LLC	Wonderful Renewable Diesel	13646 CA-33 Lost Hills, CA 93249	Poverty, Unemployment, Minority, and Age

Source: California Energy Commission staff

CHAPTER 2:
Community-Scale Advanced Biofuels Production Facilities

CR&R Perris Biomethane Facility Expansion – Phase 3

The proposed project will expand the facility located on a 52-acre solid waste property. The construction footprint is expected to be 2.26 acres. At this location, the proposer operates a solid waste and materials recovery facility and transfer station, with mechanics bays and a corporate office. The Perris facility is CR&R's largest operation with about 150 trucks. including 110 front and side loaders, 15 street sweepers, and other transfer and roll-off trucks that provide services to the cities of Perris, Temecula, San Jacinto, Canyon Lake, Lake Elsinore, Hemet, Murrieta, and Riverside. Phase 3 will enable CR&R to fuel another 100 local compressed natural gas (CNG) trucks.

The area is zoned as General Industrial, a usage category that is designed to "provide for the development of general industrial uses which may support a wide range of manufacturing and nonmanufacturing uses, from warehousing and distribution facilities to industrial activities and emergency shelters."

The CR&R waste hauling vehicles fueled by Phase 3 of the project operate out of CR&R's Transfer and Material Recovery Facility located at 11232 Knott Ave. in Stanton (Orange County). There will not be construction activities at this site, and the project will not interfere with the business or residential community surrounding the Transfer and Recovery Facility. This location is 64.1 miles from the project site in Perris, California. There are several schools located within a 2-mile radius of the CR&R Facility. Hansen Elementary, Cerritos Elementary, and Patton Elementary Schools all fall within 1 mile, and Rancho Alamitos and Western High Schools are both nearly 2 miles away. The Cypress Village neighborhood homeowner's association is 0.5 miles west of the facility. The nearest medical facility is the Regal Medical Group, 1.9 miles southwest of the facility. Two day care facilities flank the facility on opposite ends; Stanton Family Child Care is 1.5 miles northwest of the facility, and Childtime of Garden Grove is 1.5 miles southwest of the facility. There are services available for seniors 0.5 miles south on Knott Avenue at the Visiting Angels Living Assistance Services center.

The proposed project will divert 219 tons per day of organic waste from regional landfills to generate biomethane and create solid and liquid fertilizer to be sold to local agriculture. The proposer will use the biomethane produced to operate their waste collection vehicles that run on diesel. The anticipated fuel throughput to be replaced for the existing vehicles is 966,482 gallons of diesel that will be replaced with cleaner renewable natural gas (RNG) measured in diesel gallon equivalents (DGE). The expected reduction in emissions will be 60.24 tons oxides of nitrogen (NO_x) and 1.22 tons of particulate matter.

Kern Dairy Biogas Cluster RNG Project

The proposed project will build a centralized biogas collection and clean-up facility at a cluster of diaries outside Bakersfield (Kern County). The cluster is composed of 15 dairies producing nearly 1 billion standard cubic feet of biogas per year. The RNG output from the proposer's three biogas plants is anticipated to be nearly 500,000 DGE per year, with a long-term intent of 2 million DGE per year.

It is estimated that 22,691 metric tons (MT) of CO2e will be reduced annually through implementation of Phase 1 for the proposed project.

Moreover, this project is anticipated to achieve a five-year GHG reduction of 113,453 metric MT of CO2e. No major negative health impacts have been identified for the project to date.

There are single-family homes around the proposed site property. The closest residence is about 580 feet southwest of the project site, along Bear Mountain Boulevard. The proposed equipment is not within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 does not apply to this project.

Centralized MSW Organic Waste to Biomethane Facility at the Rialto Bioenergy Facility

The proposed project, when fully operational, will convert 300 tons per day (tpd) of food waste extruded from local municipal solid waste into 960,000 standard cubic feet of RNG for export through a gas purchase agreement to the Anaheim Public Utility (APU) natural gas pipeline. Clean Energy Fuels will purchase half of this RNG. APU will use the balance of the RNG to produce up to 3 megawatts of carbon-negative renewable electricity. The revitalized plant will also produce significant amounts of high-nutrient, pelletized soil amendment for sale as a Class-A biosolid. The upgraded plant will include (1) displace natural gas from an area adversely impacted by the Aliso Canyon natural gas leak, (2) divert 300 tpd of organic wastes from the nearby Mid Valley Landfill, (3) displace 2.49 million diesel-gallon equivalents of petroleum fuel, and (4) eliminate 57,223 MT of carbon emissions annually.

Biogas Conditioning System for Production of Renewable Natural Gas Vehicle Fuel Derived From Anaerobic Digestion of Recycled Food Waste at Wastewater Treatment Plant

The proposed project will construct a biogas conditioning system and associated gas conveyance pipelines to upgrade 400 standard cubic feet per minute of biogas into 761,000 DGE of RNG per year for use as vehicle fuel. The biogas will be produced from codigesting 124 tpd of prelandfilled food waste in existing anaerobic digesters at the County Sanitation Districts of Los Angeles County's Joint Water Pollution Control Plant (JWPCP) in the city of Carson (Los Angeles County). The RNG will be sold at an existing public-access CNG dispensing station owned by the sanitation districts and located on the corner of the JWPCP property.

City of Manteca Waste to Fuels Program

This proposed project will divert recoverable noncellulosic organic waste produced in the city of Manteca (San Joaquin County) from landfill disposal toward biologically generated, carbon-negative, transportation fuel. To attain that goal, the city plans to develop facilities to capture wastewater solids; commercially generated food waste; and fats, oils and grease (FOG) as part of its Waste to Fuel Program. The program was developed based on the findings and recommendations of the city's biosolids and solid waste master plans. The captured materials will be cleaned and processed with minimal organic loss for introduction into several continuously stirred anaerobic tank reactor digesters (AD) at the City of Manteca Water Quality Control Facility (WQCF). Biogas generated at the WQCF is flared to atmosphere. The AD system will produce renewable biogas that will be cleaned and compressed to fuel the city's growing fleet of compressed natural gas (CNG) vehicles. The system is designed to produce up to 500 DGE/day (182,500 DGE/year) and is anticipated to initially generate 140,000 DGE/year. The planned facilities are being designed with consideration for future increases in production capacity, potentially doubling in the near future. The requirements under CEQA have been met for all program elements. The biogas produced by the proposed facilities will be used to offset current use of diesel and gasoline in city garbage trucks and other vehicles. The city has already begun purchasing new CNG vehicles for the garbage fleet as part of the program. The city is seeking grant funding for ancillary portions of the program that are unfunded in the City Capital Improvement Program, including portions of the FOG receiving station, food waste receiving station, food waste separating facilities, and biogas conditioning station.

The WQCF is surrounded by agricultural land, which is in cultivation. The closest home is roughly 1,800 feet from the proposed project.

The zoning and regional plans for the site include continued operation of the WQCF. Care has been taken by the City of Manteca to preserve and not impede the operation and function of the WQCF by creation of zoning or other land-use conflicts.

Given the long-term operation of the WQCF, combined with the location within an agricultural plot of land, and the city's intent to preserve the unabated operation of the WQCF, there are no known conflicts with the WQCF or the planned development of the project. Other than agriculture, the area proximate to the WQCF includes industrial development. One of the closer businesses is a large-scale meat processing plant about 1,000 feet to the north. However, roughly 800 feet to the south is a baseball/softball complex. West of the WQCF is railroad frontage.

There are no day care facilities, elder care facilities, medical facilities, or schools in the area of the WQCF and the project.

CHAPTER 3: Commercial-Scale Advanced Biofuels Production Facilities

SJV Flex Feed Biodiesel

This proposed project will build and operate a new facility to produce 5,400,000 gallons of low-carbon biodiesel per year (5 million DGE per year) in the disadvantaged area of California's Central Valley. This Flex Feed Biodiesel plant will process a variety of grant-eligible feedstocks, including extracted oil and free fatty acid (FFA) wastelike oils. The facility will be integrated with the renewable fuel plant operating at Calgren Renewable Fuels, the applicant's sole owner, so that waste heat from the biodiesel plant can be used in Calgren's ethanol process. Biodiesel process reactions take place under supercritical conditions for methanol, thus avoiding the need to consume carbon-intensive catalysts. Coproduct glycerin will be more than 95 percent pure, as opposed to the 80 percent to 85 percent purity of most competing processes. The carbon intensity value of the biodiesel will be 13.83gCO_2-eq/megajoule or lower. The facility will produce no waste products. Feedstock and biodiesel offtake arrangements have been secured.

The proposed project will be implemented at Calgren Renewable Fuels' existing ethanol production facility. The project will be constructed on ½ acre of the southwest corner of the Calgren plant, using current open space. The process storage tanks will be added to the west of Calgren's cooling tower. The skid will be placed to the north of the cooling tower, close to an existing pipe rack to promote interconnection tie-ins with the ethanol plant. The proposed project has one residential neighbor. The project is 4 miles from the closest school and 5 miles from the closest medical facility.

The New Leaf Biofuel Upgrade and Production Expansion Project

The proposed project will upgrade and expand production at the San Diego biodiesel plant by 140 percent from current levels of 5 million gallons per year to 12 million gallons per year of ultra-low-carbon biodiesel without expanding the physical footprint of the plant. The proposed expansion will be located in a heavily industrialized, disadvantaged community about 1.5 miles southeast of downtown San Diego. When fully operational, the biodiesel produced at the expanded facility will eliminate up to 76,769 MT of additional carbon emissions annually, generate nearly $12 million in combined local and statewide economic activity, create up to 21 temporary and permanent jobs, and directly mitigate the negative environmental effects of petroleum-based transportation fuel air emissions. In addition to delivering the benefits described above, the upgraded facility will employ third-generation production technologies, including an innovative, reusable, solid, heterogeneous esterification catalyst that, in conjunction with the other proposed upgrades, will enable New Leaf Biofuel to accept a variety

of new feedstocks—including waste animal fats and brown grease—characterized by high FFA content and relatively poor commercial value, but extremely low carbon intensities. The upgrades will also reduce the overall waste streams, water consumption, and per-gallon operating costs of the plant, while enhancing methanol recovery and coproduct quality in comparison to the existing system.

The closest residential neighborhood is Barrio Logan, just 900 feet east of the facility. The closest school to the site is Memorial Preparatory for Scholars & Athletes, about 0.5 mile away. Other schools within 1.0 mile include Cesar E. Chavez Campus, Burbank Elementary, Perkins Elementary, Monarch School, Logan K-8, and Rodriguez Elementary. Sharp Coronado Hospital, Naval Medical Center San Diego, and Paradise Valley Hospital are all within 3.5 miles of the site.

Wonderful Renewable Ag Products

The proposed project will develop an innovative and transformative commercial-scale renewable diesel facility that uses an advanced high-temperature pyrolysis technology to produce low-carbon transportation fuel from waste almond shells. The proposed project will be located at the existing Wonderful Hulling & Shelling facility. When fully operational, the proposed facility will convert waste almond shells from Wonderful Hulling & Shelling, Wonderful Pistachios & Almonds, and Wonderful Nut Orchards into 4.8 million gallons per year (maximum design capacity) of renewable diesel, displace 4,627,947 DGE per year, and eliminate 61,666 MT of carbon emissions annually. The project will rely upon the modular CHyP (pronounced "chip") Gasifier from Proton Power, which uses an unconventional form of pyrolysis to produce an intermediate syngas that is then further processed into renewable diesel, a high-nutrient biochar, and wood vine.

The site is rural, and there are no residential areas closer than the town of Lost Hills, nearly 6.0 miles away. The closest schools, A. M. Thomas Middle, Lost Hills Elementary, and Lost Hills Union, as well as the closest medical facility, Omni Family Health, are also nearly 6.0 miles away in Lost Hills.

Tracy Integrated Campus: Renewable Ethanol From Sugar Beets

The proposed project will develop a 26-million-gallon-per-year (MGY) renewable ethanol facility. Located at a developing integrated renewable energy and water management campus (Tracy Integrated Campus) in Tracy (San Joaquin County), the proposed new facility will convert locally grown sugar beets into 26 MGY of renewable ethanol for transportation fuel with an ultra-low carbon intensity (CI) score substantially below the average CI of ethanol produced in the United States. During project execution, Pacific Ethanol will design, build, and operate the ethanol production facility, which would represent one element of the Tracy Integrated Campus. Once fully operational, the proposed ethanol production facility will annually displace 15,570,611 DGE, eliminate up to 129,919 MT of carbon emissions per year, and will support 20,000 acres of local farming. The larger integrated campus (scheduled for completion in 2018) will consist of three independent but interrelated facilities: 1) a desalination plant that will process up to 1.2

million gallons per day of high-salinity wastewater from a local cheese processing plant, 2) a renewable electricity facility that uses local walnut shell residue from hulling and shelling operations to produce renewable electricity and heat, and 3) the proposed renewable ethanol production facility. Collectively, the three synergistic and integrated facilities will efficiently produce low-carbon fuel, renewable electricity, and clean water and address three important management issues across the greater Tracy area: wastewater treatment, organic waste management, and high-value farming.

The site is zoned industrial and houses the mothballed Holly Sugar Factory. The project plan includes demolition of the existing sugar factory, though plans are to retain as much equipment as possible.

The closest residential neighborhood to the site is located about0.7 miles to the south across Interstate 205. North Elementary School, the closest to the site, is nearly 1.0 mile away, and Willow Community Day, Tracy SDA Christian, Monte Vista Middle, Jacobson Elementary, and McKinley Elementary Schools are all within 2.0 miles of the site.

3rd Generation Bakersfield Biodiesel Production Facility

The proposed project will design, build, construct, and operate California's first third-generation commercial-scale biodiesel refinery directly adjacent to the existing second2nd-generation biodiesel production plant. When fully operational, the new facility will convert a variety of low-value feedstocks (such as trap grease from "interceptors" at food service establishments, low- to very-low-quality inedible animal fats, and soap stocks) that are characterized by very high levels of FFA, sulfur, and/or other impurities into 12 MGY of low- and ultra-low-carbon (LCI and ULCI), drop-in, ASTM-6751 biodiesel and a high-quality glycerin coproduct that is more than 96 percent pure. Biodiesel producers using first- and second-generation processing equipment are generally unable to use these low- value waste materials as feedstock because they are unable to handle high FFA contents (up to 100 percent), sulfur contents and plastics content that exceeds 50 parts per million. When fully operational, the new plant will displace almost 12 MGY of petroleum, directly mitigate the negative environmental effects of petroleum-based transportation fuel air emissions, and reduce greenhouse gas emissions by 107,478 to 124,127 MT of carbon-dioxide equivalents per year. Significantly, when compared to new production capacity based on technologies that can only process higher-quality feedstocks-such as used cooking oil, higher-value animal fats, or virgin vegetable oils, a new plant using the aforementioned low-value feedstocks that cannot currently be used for biofuels production will also extend the supply of in-state feedstocks suitable for biofuels production and put less pressure on the availability of other higher-value feedstocks.

The site is in a rural area outside Bakersfield. There are some farms within 3.0 miles of the plant, but the closest residential neighborhood is located 9.0 miles away in the town of Panama, just south of Bakersfield. The closest school, Panama Elementary, is also 9.0 miles away, with other Bakersfield schools more than 11.0 miles away. The closest hospital, Mercy Southwest, is 12.4 miles away, with other medical facilities in Bakersfield even farther from the site.

Wonderful Renewable Diesel

The proposed project will design, construct, and operate a commercial-scale renewable diesel facility using an advanced, second-generation conversion technology to produce low-carbon transportation fuel from waste pistachio hulls. This project will be colocated with an existing Wonderful Pistachios & Almonds LLC facility. When fully operational, the proposed facility will use 40 million pounds of waste pistachio hulls to produce 2 million gallons per year of renewable diesel. The proposed project will also be the first technology in the state to demonstrate the successful conversion of nut-crop hulls to drop-in ultra-low-carbon vehicle fuel. The project will rely upon an innovative new technology (provided by Recycled Energy Corporation) that has been purpose-built and tested for use with pistachio hull feedstock, which presents numerous disposal challenges because of the relatively low nutrient content and, more significantly, contamination with hard, sharp pistachio shells.

The facility location is rural, and there are no residential areas closer than the town of Lost Hills, more than 11 miles away. The closest schools, A. M. Thomas Middle, Lost Hills Elementary, and Lost Hills Union, as well as the closest medical facility, Omni Family Health, are also more than 11 miles away in Lost Hills.

CHAPTER 4:
Approach

The Localized Health Impact Report (LHI Report) Assessment Method in Appendix A assesses communities potentially impacted by air pollution and possibly benefitted by advanced biofuels production facility projects. The California Air Resources Board's (CARB) *Proposed Screening Method for Low-Income Communities Highly Impacted by Air Pollution for Assembly Bill (AB) 32 Assessments* is also used to integrate data to identify low-income communities that are highly impacted by air pollution.[1] Other resources used in this assessment are the *California Infrastructure State Implementation Plans,*[2] which contain publicly noticed air quality attainment plans, and the *Green Book Nonattainment Areas for Criteria Pollutants*[3].

For this LHI Report, the Energy Commission interprets "permits" to connote discretionary and conditional use permits because they require a review of potential impacts to a community and the environment before issuance. Since ministerial-level permits, such as building permits, do not assess public health-related pollutants, the Energy Commission staff does not assess projects requiring only ministerial level permits in this report.

The cities where the projects will be located are in nonattainment zones for ozone, PM[4] 2.5, and PM 10. Table 1 shows the EJ indicators for the 11 projects covering nine cities, that is, minority populations, low incomes, and highly sensitive groups based on age (individuals younger than 5 years of age and older than 65 years of age). Table 2 shows the demographics. Bakersfield, Bloomington, Carson, Lost Hills, Perris, Pixley, and Tracy are classified high-risk communities, according to the Environmental Justice Screening Method (EJSM). San Diego is not classified as high-risk.

Staff collected information about predicted emissions from all the project proposals. Activities conducted are not expected to have significant impact on emissions. If funded, the proposed projects would increase low-carbon biofuel production, resulting in better air quality, reductions in greenhouse gas emissions, and displaced petroleum fuel demand.

1 California Air Resources Board, *Proposed Screening Method for Low-Income Communities Highly Impacted by Air Pollution, 2010* (Sacramento, California).
2 http://www.arb.ca.gov/planning/sip/sip.htm.
3 http://www.epa.gov/oaqps001/greenbk.
4 "Particulate matter" is unburned fuel particles that form smoke or soot and stick to lung tissue when inhaled, and is a chief component of exhaust emissions from heavy-duty diesel engines.

CHAPTER 5:
Summary

If funded, the 11 proposed projects would result in nine cities adding new or existing biofuel production, which would help achieve both energy and climate change goals. Based on the review of the proposed projects in this Localized Health Impacts Report, it is not anticipated that implementing the proposed projects would have negative impacts on the surrounding communities because a net increase in criteria and toxic emissions will not result. The sites will increase production of alternative and renewable transportation fuels in California. As more alternative and renewable transportation fuels enter the market and begin to displace gasoline and diesel demand, tailpipe pollutants will decrease significantly. The facilities stand to nominally increase traffic for inbound deliveries of feedstock and raw materials and outbound deliveries by truck and rail. Yet, a net benefit is realized from less petroleum use and more alternative fuel use as a result of these projects. The anticipated impacts to the cities where these projects would be located are positive in terms of cleaner air and anticipated greenhouse gas emissions reductions.

As indicated in Table 1, with further detail in Table 2, eight out of nine cities/towns of the projects are high-risk communities, as identified in Appendix A. The demographic data presented in this LHI indicate higher concentrations of minority populations, especially Hispanic, along with children under 5, and those with low incomes and/or facing high employment. The anticipated health benefits from the proposed projects for the people in these communities, especially the disadvantaged communities, is highly likely, if not certain, to be positive.

CHAPTER 6: Acronyms

Air Quality Improvement Program (AQIP)

Air Resources Board (CARB)

Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP)

Anaheim Public Utility (APU)

Anaerobic digester (AD)

Assembly Bill (AB)

California Code of Regulations (CCR)

California Environmental Quality Act (CEQA)

Carbon intensity (CI)

Compressed natural gas (CNG)

Diesel gallons equivalent (DGE)

Environmental justice (EJ)

Environmental justice screening method (EJSM)

Fats, oils, and grease (FOG)

Free fatty acids (FFA)

Grant funding opportunity (GFO)

Localized health impact (LHI)

Low- and ultra-low carbon intensity (LCI, ULCI)

Manteca Water Quality Control Facility (WQCF)

Metric tons (MT)

Million gallons per year (MGY)

Notice of proposed awards (NOPA)

Particulate matter (PM)

Renewable natural gas (RNG)

State Implementation Plan (SIP)

Tons per day (TPD)

Table 2: Environmental Justice (EJ) Indicators Compared With California
Yellow highlighted areas indicate numbers (percentages) that meet the definition for EJ indicators.

	Number of EJ Indicators by Category	Below Poverty Level (2014)	Black Persons (2010)	American Indian and/or Alaska Native (2010)	Asian and/or Pacific Islander (2010)	Persons of Hispanic or Latino Origin (2010)	Persons Under 5 Years of Age (2010)	Persons Over 65 Years of Age (2010)	Unemployment Rate (January 2017)
California		**16.4%**	**6.2%**	**1.0%**	**13.0%**	**37.6%**	**6.8%**	**11.4%**	**5.1%**
		>16.4%	**>30%**	**>30%**	**>30%**	**>30%**	**>8.16%**	**>13.8%**	**>5.1%**
Bakersfield	4	19.8%	8.2%	1.5%	6.2%	45.5%	9.0%	8.4%	8.9%
Bloomington	4	22.0%	2.7%	1.3%	1.4%	81.0%	8.4%	6.6%	6.5%
Carson	3	10.9%	23.8%	0.6%	25.6%	38.6%	5.7%	13.8%	6.1%
Lost Hills	4	37.2%	0.2%	0.0%	0.7%	97.6%	14.3%	2.5%	5.9%
Manteca	2	12.1%	4.3%	1.1%	7.1%	37.7%	7.7%	9.9%	8.1%
Perris	4	25.3%	12.1%	0.9%	3.6%	71.8%	10.0%	4.9%	7.8%
Pixley	4	50.2%	2.7%	0.8%	0.5%	80.8%	10.1%	6.3%	15.6%
San Diego	None	15.4%	6.7%	0.6%	15.9%	28.8%	6.2%	10.7%	3.9%
Tracy	2	8.6%	7.2%	.09%	14.7%	36.9%	8.0%	6.9%	6.7%

Sources: Unemployment information from the State of California, Employee Development Department Labor Market Information Div.: http://www.labormarketinfo.edd.ca.gov/data/unemployment-and-labor-force.html#Tool and http://www.labormarketinfo.edd.ca.gov/data/labor-force-and-unemployment-for-cities-and-census-areas.html
U.S. Census Bureau, http://www.census.gov/quickfacts/table/PST045215/0664000,06,00 and http://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml

APPENDIX A:
Localized Health Impact Report Assessment Method

Based on the California Energy Commission's interpretation of the *California ARB* AQIP *Guidelines*, this LHI Report assesses the potential impacts to communities because of the projects proposed by the ARFVTP. This report is prepared under the *California ARB AQIP Guidelines, California Code of Regulations, Title 13, Motor Vehicles, Chapter 8.1 (CCR § 2343)*:

"(6) Localized health impacts must be considered when selecting projects for funding. The funding agency must consider environmental justice consistent with state law and complete the following:

> (A) For each fiscal year, the funding agency must publish a staff report for review and comment by the public at least 30 calendar days prior to approval of projects. The report must analyze the aggregate locations of the funded projects, analyze the impacts in communities with the most significant exposure to air contaminants or localized air contaminants, or both, including, but not limited to, communities of minority populations or low-income populations, and identify agency outreach to community groups and other affected stakeholders.
>
> (B) Projects must be selected and approved for funding in a publicly noticed meeting."

This LHI Report is not intended to be a detailed environmental health impact analysis of proposed projects nor is it intended to substitute for the environmental review conducted during the California Environmental Quality Act (CEQA) review. This LHI Report includes staff's application of the Environmental Justice Screening Method (EJSM) to identify projects located in areas with social vulnerability indicators and the greatest exposure to air pollution and associated health risks[5].

The EJSM was developed to identify low-income communities highly affected by air pollution for assessing the impacts of climate change regulations, specifically Assembly Bill 32 (Núñez, Chapter 488, Statutes of 2006), the California Global Warming Solutions Act of 2006. The EJSM integrates data on (i.) exposure to air pollution, (ii.) cancer risk, (iii.) ozone concentration, (iv.) frequency of high ozone days, (v.) race/ethnicity, (vi.) poverty level, (vii.) home ownership, (viii.) median household value, (ix.) educational attainment, and (x.) sensitive populations (populations under 5 years of age or over 65 years of age).

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5 California Air Resources Board (ARB). *Air Pollution and Environmental Justice, Integrating Indicators of Cumulative Impact and Socio-Economic Vulnerability Into Regulatory Decision-Making, 2010.* (Sacramento, California) Contract authors: Manuel Pastor Jr., Ph.D., Rachel Morello-Frosch, Ph.D., and James Sadd, Ph.D.

To determine high-risk communities, environmental justice (EJ) indicators for locations of the biofuel production facilities are compared to data from the U.S. Census Bureau or other public agency. Staff identifies high-risk communities by using a two-part standard. For a community to be considered high- risk, for this assessment, it must meet both Parts 1 and 2 of this standard.

Part 1:

- Communities located in nonattainment air basins for ozone, PM 10, or PM 2.5

Part 2:

- Communities having more than one of the following EJ indicators: (1) minority, (2) poverty, (3) unemployment and (4) high percentage of population under 5 years of age and over 65 years of age. The EJ indicators follow:
    - A minority subset represents more than 30 percent of a given city's population.
    - A city's poverty level exceeds California's poverty level.
    - A city's unemployment rate exceeds California's unemployment rate.
    - The percentage of people living in that city are younger than 5 years of age or older than 65 years of age is 20 percent higher than the average percentage of persons under 5 years of age or over 65 years of age for all of California.